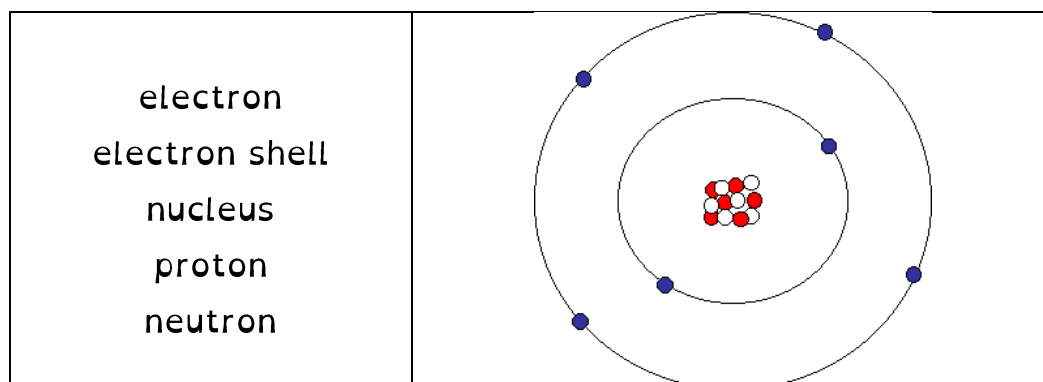


### Extra-help on Atomic Structure

1) The diagram below is of an atom, label the atom with the following words



2) Below is some information from the Periodic table, about the Aluminium atom, answer the questions

i) What is the symbol for aluminium?

ii) What is the name given to the number next to the letters Al?

iii) What does the number tell us?

iv) Aluminium is a “neutral” atom, what does neutral mean?

13 Al
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3) Sometimes, in NCEA exams, you may be told that the Mass number for a Carbon atom is 14. Complete the missing words using your knowledge of atoms

The mass number is the total number of particles in the nucleus, so carbon has a total of \_\_\_\_\_ particles in its nucleus. The particles in the nucleus are called \_\_\_\_\_ and \_\_\_\_\_. We already worked out from the Atomic number in question 2 that a Carbon atom has \_\_\_\_\_ electrons and \_\_\_\_\_ protons. If a Carbon atom has 14 particles in the nucleus and 6 of these particles are called protons, then the other \_\_\_\_\_ particles must be neutrons.

Protons have a \_\_\_\_\_ charge, neutrons have \_\_\_\_\_ charge and electrons have a \_\_\_\_\_ charge. Electrons are extremely light and float around the nucleus in \_\_\_\_\_. Only \_\_\_\_\_ electrons fit in the first shell, in Year 11 we have learned that all of the other shells have room for \_\_\_\_\_ electrons.

4) Overleaf is a blank Periodic table (the middle section "Transition metals" is missing) complete each of the following activities

- i) Label each group of the Periodic table with its correct name or number
- ii) Label each period of the Periodic table with its correct number
- iii) Choose 1 group and draw the electrons on the shells for each atom (get the Atomic numbers from your Periodic table that your teacher has given to you)
- iv) Now, write the number of neutrons and protons in the nucleus for the group that you used in ques iii)
- v) Complete the missing gaps in the following paragraph

Vertical columns of the Periodic table are known as \_\_\_\_\_ Horizontal rows of the Periodic table are known as \_\_\_\_\_ Elements in the same group all have the same number of \_\_\_\_\_ in their outer shell eg I drew the atoms of group \_\_\_\_ and noticed that they all have \_\_\_\_ electrons in their outer shell. Elements in the same period all have the same number of \_\_\_\_\_ eg I drew the atoms of period \_\_\_\_ and noticed that they all have \_\_\_\_ shells.

#### ANSWERS

- 1) electrons are marked with circles on the electron shells, neutrons and protons are in nucleus (the middle)
- 2) Al, Atomic number, the number of protons which is the same as the number of electrons protons and neutrons,  
"neutral" means that an atom does not have a charge because the atom has the same number of protons (13 for Aluminium) (which are positively charged) and electrons (13 for Aluminium) (which are negatively charged)
- 3) 14, protons, neutrons, 6, 6, 8, positive, neutral or no, negative, electron shells, 2, 8
- 4) groups, periods, electrons, eg... one, one eg...shells, eg...two, two

1	2	13	14	15	16	17	18
